

Neighbours

A part of the community since 1978 • Volume 8 • Number 4 • Fall 2004

Tracking the environment

Land, water, air - monitoring program ensures minimal impact of industry

Jobs close to home are desirable for any community.

But minimizing the impact on the surrounding environment is key to making the relationship between industry and residents a happy one.

For Ontario Power Generation, the safety and wellness of the community and its workers have always been priority number one. An essential part of our environmental stewardship is an extensive monitoring program that closely tracks all impacts of our operations on the land, water and air surrounding the Darlington and Pickering nuclear plants.



The milk of Durham cows, along with local produce, air and water, is routinely sampled by Ontario Power Generation, to ensure our operations leave as small an ecological footprint on the environment as possible. Above, OPG's Gaston Laurin takes a milk sample from an Ajax dairy farm.



Daily, weekly, monthly and yearly sampling at hundreds of sites throughout Durham and surrounding municipalities ensures that OPG leaves as small an ecological footprint as possible while generating energy to meet the electricity demands of Ontario's residents and businesses.

OPG collects samples from a variety of sources, for monitoring potential substance release, explains Brian Carter, an OPG health physicist. "We grow gardens and arrange for samples from local residents' gardens to ensure a large range of fruits and vegetables. We monitor the milk produced at local dairy farms and test honey produced in the area. Bees cover a large territory during their day-to-day business and this gives a nice representative sample for the area. We also take water samples from area wells and have monitoring stations and collection pails for rainwater in locations you might pass by in your everyday life without even realizing they are there."

OPG's data is then shared with the Durham Region Health Unit, Health Canada and other government agencies and research institutions

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Message from Gregory Smith

At Darlington Nuclear we have the proud distinction of being Canada's highest-rated performing plant on the nuclear performance index.

It is a distinction we do not take lightly and work hard every day to earn.

Our plant's top goal this year has been generation performance, in other words our ability to get out the most electricity for the people of Ontario in the safest, most efficient manner. We have had some great successes this year in this area, with Darlington's units operating at high capacity throughout 2004. When they are not producing electricity, we perform maintenance needed to keep the units humming.

Not unlike a car or house, a nuclear station requires constant upkeep on systems in order for it to run at optimum efficiency, now and in the future. OPG has committed to a maintenance schedule that respects the province's need for reliable energy production, not just today but tomorrow as well.

Meanwhile, for our corporation as a whole and particularly our sister station, Pickering Nuclear, priority one has been bringing more electricity generation online through the restart of Unit 1 at Pickering A.

The goal is to create more energy supply for Ontario's residents and businesses in a way that will keep our air clean. The restart of this unit, capable of producing enough electricity for 350,000 homes virtually smog and emission free, is an important part of that plan.

At the same time, Ontario Power Generation is mindful of the need for cost-efficiency. Ontarians need both a plentiful supply of electricity and one they can afford so our other priority in 2004 has been the reduction of costs where possible.

There are some expenses we can't control. In fact two-thirds of OPG's budget goes toward non-discretionary costs such as fuel costs and water taxes, the mandatory rebate to electricity users and other regulatory requirements.

But, in the remainder, the company has made serious reductions to expenditures and continues to look at further cost-saving measures for 2005.

To date, these measures have included:

- A reduction of executive staff by 20 per cent;
- Travel and accommodation cost reduction of 18 per cent;
- A rigorous reporting system that includes quarterly financial and performance reviews;
- A revision to the year's business plan by the Board of Directors in March, 2004 reduced the budget by \$178 million. As a result of further cost cutting, OPG is on track to have this further reduced by \$100 million by year end.

Bringing OPG's bottom line expenses down has not been an easy task in a year when the cost of coal and gas have both risen and our requirement to invest in environmental protections at our fossil operations have increased. In addition, we have been making a substantial increase in our investment of nuclear security in keeping with the commitment to 'safe and secure' facilities in all our communities.

We are proud of Darlington's contribution to the stability of Ontario's electricity supply.

Gregory Smith
Senior Vice President
Darlington Nuclear

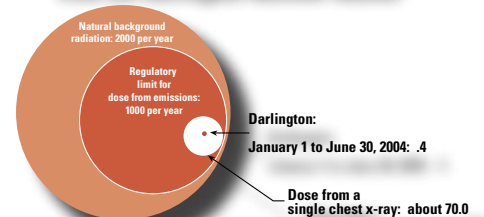
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ensuring thorough analysis not just by OPG but by objective third-party sources as well. Third-party reviews of our data ensure the integrity of our monitoring systems.

"It's important to realize the results of all the monitoring have never shown any substance levels anywhere near regulatory limits," Brian notes. "People sometimes think we are measuring to ensure we are meeting our regulatory limits but that isn't it. We are mainly looking for variations in the levels. A level can increase and still be a very small fraction of the allowable amount but the point is if there is a change, we want to know why."

Sometimes, discoveries made through OPG's monitoring activities have revealed issues completely unrelated to the operation of our stations. It's valuable knowledge nonetheless for our communities. We work closely with our government agency partners. It's an investment, and a commitment, to the communities in which we operate.

Radiation dose due to emissions from the Darlington Nuclear Station



Dose is reported in microsieverts, an international unit used to measure radiation dose.

The radiation doses due to emissions are for the most-exposed persons living near the station. They would typically apply to persons living just outside the station boundary who are at their residences 24 hours a day, who drink local water and eat local fish and produce. The doses were calculated using actual data from routine analysis of air, water, fish and vegetation samples, as well as station emission data.

Most persons would actually receive less than the doses indicated because they have different eating habits or live farther away from the station.

Radiation doses decrease significantly as the distance from the station increases.

Darlington Report Card

A commitment to our environment and community

Darlington Nuclear's strong safety and environmental protection focus was evident in the results of the second quarter, 2004 Darlington Nuclear report card.

Environmental performance

To date in 2004, Darlington has had no spills into the environment of chemicals or any other substances from the station. A commitment to preventative action on environmental spills is just part of the reason for Darlington's ISO 14001 certification for environmental practices.

Electricity Production

In the second quarter, Darlington's electricity production 'capability factor' was reduced to an overall performance rating of 84.03 per cent, lower than its target of 87.69. This was primarily due to extended preventative maintenance and repairs being performed on one of the units.

Radiation dose to public

As always, the radiation dose to the public was exceptionally low. Someone living just outside the Darlington station would have accumulated 0.4 microsieverts of radiation, a miniscule percentage of the regulatory limit, 1000 microsieverts, allowable. Though microsieverts is a measurement unfamiliar to many people, it is helpful to consider that the average Canadian receives about 2,000 microsieverts a year from natural sources such as cosmic rays and radon in the soil. A dental xray gives off about 70 microsieverts.

Nuclear Performance Index

Darlington's nuclear performance index for the first half of the year rated 88.5 per cent, the highest of any Canadian nuclear generating station.

How Durham powers Ontario

Pickering Nuclear's Unit 1 will bring more supply for growing demand

Durham Region plays a significant role in keeping Ontario's lights on and its industries humming through electricity production at Pickering Nuclear and Darlington Nuclear Generating Stations.

Currently, priority one at Ontario Power Generation is the refurbishment of Unit 1 at Pickering A, which, when completed, will provide enough additional electricity to power 350,000 residences within the Province of Ontario.

"The Unit 1 project has three major benefits," OPG Chairman Jake Epp says. "First, it is economical over its lifetime against other generation alternatives; second it is the quickest way to provide additional power to the province and third, it will generate power with virtually no emissions leading to smog or global warming."

OPG is definitely up to the challenge but it will be no easy task, the Chairman says. "It is an extraordinarily complex construction project. All in, it involves the completion of almost 20,000 tasks involving 1.7 million person-hours of work. It also entails the purchase of almost two million individual parts, ranging from quarter inch bolts to 20 foot heat exchangers." Much of the work must be completed in challenging

working environments such as tight spaces and radiological areas where cumbersome protective suiting is required.

On Oct. 15, OPG met the first milestone it committed to on the project. "The front-end work – specifically the engineering as well as planning and assessing of all of the tasks has been done," Jake says. He notes OPG has the benefit of independent oversight auditors going through the project with the company step-by-step and providing regular input as well as monitoring project progress.

The next three to four months will be the heaviest and most complex of all for the unit that is scheduled to begin the commissioning process June 1 and will be declared in service in September 2005.

"What's impressed me most is the professionalism and performance of our employees," Jake says. "They are very dedicated to helping meet Ontario's needs. I believe that OPG has a major role to play in supplying the province with electricity going forward."

Durham Region, with its workers and its businesses, is an integral partner in OPG's success.

Construction to begin on storage facility



Interim waste facility gets the green light

For every large-mass energy source currently used to power our cities and industries, there is some form of waste product that remains behind.

With fossil fuels such as gas and coal, the waste translates into air emissions that cause smog and global warming.

In the creation of nuclear-powered energy, there are virtually no emissions released into the atmosphere.

However, what are left at the end of the process are spent fuel bundles, highly radioactive in the first ten years after use.

At Darlington Nuclear, and all of Ontario Power Generation's nuclear facilities, the spent fuel bundles are stored in pools of water for this time period. At the end of the 10 years, the radioactivity and temperature of the fuel bundles are significantly reduced. Still the bundles must be kept safely and securely contained away from water, soil and human contact for hundreds of years to ensure no impact on the environment.

Currently, by appointment of the federal government, the Nuclear Waste Management Organization is looking for a long-term storage solution for the fuel bundles. The organization is considering three options: deep underground burial of the waste; a central depot; or long-term storage on site in well-contained and secured buildings.

Between the time of initial wet storage in the pools and the long-term storage, each nuclear site in Ontario has interim dry storage facilities for the bundles used at that location.

The bundles are removed from the pool into heavily shielded dry storage casks which are then welded, sealed and tested before transfer into the storage facility, a building created to extraordinary specifications for this purpose.

Darlington, which was only brought into service beginning in the early 1990s has not yet needed this interim dry storage facility as its pool is not yet full. However by 2010, the first bundles will need to be removed from the on-site pool to make way for future ones.

The Canadian Nuclear Safety Commission (CNSC) has issued Ontario Power Generation a license to construct a used fuel dry storage facility on the Darlington Nuclear Generating Station site.

The decision follows an extensive public and stakeholder consultation process that began back in Feb. 2001.

The facility will accommodate used fuel bundles from the reactors at the Darlington site only.

The environmental assessment report for the facility was approved in November of 2003. Construction is expected to take place during 2005 and 2006 and pending CNSC approval of an operating license, the facility could be in service by the fall 2007.

For more information view the OPG Web site at www.opg.com or call the Darlington Nuclear Information Centre at 905-623-7122.



OPG at Family Safety Day

On September 25, Darlington Nuclear participated in the Clarington Family Safety Day event along with other community partners such as the Clarington Fire Department and the Durham Regional Police Services. Darlington's emergency responder shared tips on how to extinguish a blaze. This event is just one of several community and site events.

Neighbours

Darlington Neighbours is published for the neighbours of Ontario Power Generation at Darlington Nuclear.

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